**IN THE CLAIMS:**

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 1, 7, 8, 9, 10 and 16 in accordance with the following:

1. (currently amended) A method comprising:

outputting an optical signal having a chirping determined by a chirp parameter to an optical fiber transmission line, including generating said optical signal by optical modulation based on a modulating signal obtained by adding a redundancy code to a transmission data code;

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converting the optical signal transmitted by said optical fiber transmission line into an electrical signal;

detecting a first error count when the chirp parameter is set to a positive value;

detecting a second error count when the chirp parameter is set to a negative value;

comparing the first error count with the second error count to provide a difference; and

controlling said chirp parameter in accordance with ~~the difference~~ so that bit error detected is reduced.

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~~detecting a bit error of said electrical signal;~~

~~controlling said chirp parameter so that said bit error detected is reduced; and~~

~~correcting said bit error of said electrical signal according to said redundancy code, wherein said detecting including counting the number of corrections of said bit error obtained in said correcting, and wherein said controlling said chirp parameter based upon comparing between a first number of corrections of said bit error detected when the chirp parameter is set to a positive value and a second number of corrections of said bit error detected when the chirp parameter is set to a negative value.~~

2. (previously presented) A method according to claim 1, wherein said controlling including switching the sign of said chirp parameter.

3. (previously presented) A method according to claim 2, wherein:

said outputting including generating said optical signal by optical modulation using a Mach-Zehnder optical modulator; and

controlling including switching an operating point of said Mach-Zehnder optical modulator.

4. (previously presented) A method according to claim 1, said outputting including adjusting said chirp parameter to an optimum value so that said bit error detected is minimized.

5. (previously presented) A method according to claim 4, wherein:

outputting including generating said optical signal by optical modulation using an electroabsorption optical modulator; and

controlling including changing a bias voltage to be applied to said electroabsorption optical modulator.

6. (cancelled)

7. (currently amended) A system comprising:

first and second terminal devices; and

an optical fiber transmission line connecting said first and second terminal devices;

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said first terminal device comprising:

an optical transmitter outputting an optical signal having a chirping determined by a chirp parameter to said optical fiber transmission line, said optical transmitter generating said optical signal by optical modulation based on a modulating signal obtained by adding a redundancy code to a transmission data, and

a control unit controlling said chirp parameter according to a control signal, said control unit correcting said bit error of said electrical signal according to said redundancy code;

said second terminal device comprising:

an optical receiver converting the optical signal transmitted by said optical fiber transmission line into an electrical signal,

a monitor unit detecting a bit error of said electrical signal, said monitor unit comprising counting the number of corrections of said bit error obtained by said control unit, and

a transmitter to transmit ~~means for transmitting~~ supervisory information on said bit error detected to said first terminal device; wherein said control signal is generated in said first terminal device so that said bit error detected is reduced,

wherein the control unit determines a difference between a first error count detected

when the chirp parameter is set to a positive value and a second error count detected when the chirp parameter is set to a negative value and generates the control signal based on the difference.

~~and wherein said control unit controlling said chirp parameter based upon comparing between a first number of corrections of said bit error detected when the chirp parameter is set to a positive value and a second number of corrections of said bit error detected when the chirp parameter is set to a negative value.~~

8. (currently amended) A system according to claim 7, wherein:

said optical transmitter comprises a light source outputting continuous wave (CW) light, and a Mach-Zehnder optical modulator for modulating said CW light to generate said optical signal; and

said control unit includes a switcher to switch ~~means for switching~~ an operating point of said Mach-Zehnder optical modulator, thereby switching the sign of said chirp parameter.

9. (currently amended) A system according to claim 7, wherein:

said optical transmitter comprises a light source for outputting continuous wave (CW) light, and an electroabsorption optical modulator for modulating said CW light to generate said optical signal; and

said control unit includes ~~means for changing~~ a changing unit to change a bias voltage to be applied to said electroabsorption optical modulator, thereby adjusting said chirp parameter to an optimum value so that said bit error detected is minimized.

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10. (currently amended) A system according to claim 7, wherein:

said optical transmitter comprises a light source outputting continuous wave (CW) light, an encoder adding the redundancy code to the transmission data code to thereby generate the modulating signal, an optical modulator modulating said CW light according to said modulating signal to thereby generate said optical signal;

said optical receiver includes a decoder correcting said bit error of said electrical signal according to said redundancy code; and

said monitor unit includes ~~means for counting~~ a counter to count the number of corrections of said bit error obtained by said decoder.

11. (previously presented) A system according to claim 7, wherein:

said first terminal device further comprises an optical amplifier amplifying the optical signal

output from said optical transmitter.

12. (previously presented) A system according to claim 7, wherein:

said second terminal device further comprises an optical amplifier amplifying the optical signal to be received by said optical receiver.

13. (original) A system according to claim 7, wherein said optical fiber transmission line is provided by a dispersion shifted fiber having a zero-dispersion wavelength near 1.55 μm.

14. (original) A system according to claim 7, wherein said optical fiber transmission line is provided by a single-mode fiber having a zero-dispersion wavelength near 1.3 μm.

15. (previously presented) A system according to claim 14, wherein said first terminal device further comprises a dispersion compensating fiber compensating for chromatic dispersion occurring in said optical fiber transmission line, and an optical amplifier amplifying the optical signal output from said optical transmitter.

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16. (currently amended) A terminal device comprising:

an optical transmitter outputting an optical signal having a chirping determined by a chirp parameter to an optical fiber transmission line, said optical signal generated by optical modulation based on a modulating signal obtained by adding a redundancy code to a transmission data code;

~~means for receiving~~ a receiver to receive supervisory information on a bit error detected in relation to the optical signal transmitted by said optical fiber transmission line; and

~~means for controlling~~ a controller to control said chirp parameter according to said supervisory information so that said bit error detected is reduced,

wherein said supervisory information includes a first error count detected when the chirp parameter is set to a positive value and a second error count detected when the chirp parameter is set to a negative value, and

wherein the controller determines a difference between the first error count and the second error count and controls the chirp parameter based on the difference.

~~including the number of corrections of said bit error obtained in correcting said bit error of said electrical signal according to said redundancy code and wherein said means for controlling said chirp parameter based upon comparing between a first number of corrections of said bit error detected~~

D1 Cond. ~~when the chirp parameter is set to a positive value and a second number of corrections of said bit error detected when the chirp parameter is set to a negative value.~~

**INTRODUCTION**

Claims 1-5 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa (USPN 5,926,297) in view of Utsumi (USPN 6,031,644).

Claims 7-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa (USPN 5,926,297) in view of Utsumi (USPN 6,031,644) and further in view of Aoki (USPN 5,315,426).

In accordance with the foregoing, claims 1, 7, 8, 9, 10 and 16 have been amended. Claims 1-5 and 7-16 are pending and under consideration.

**REJECTION UNDER 35 USC §103**

**A.** Claims 1-5 and 16 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa et al. (USPN 5,926,297) in view of Utsumi (USPN 6,031,644).

This rejection is traversed, and reconsideration is respectfully requested.

Claims 1 and 16 have been amended for clarity.

It is respectfully submitted that Ishikawa et al. teaches using a feedback unit 192 to control a chirp parameter by utilizing transmission characteristics such as bit error rate (BER), Q-value, parity bit check in a signal, or a transmission waveform (i.e., whether or not a required eye mask pattern is satisfied).

A bit error rate (BER) is generally defined as the number of bits received in error over a selected period of time, i.e., is expressed as a fraction, when the <u>parameters are held constant</u>.

In contrast, the present invention recites detecting a first error count (not a BER) <u>when a chip parameter is set to a positive value</u>, detecting a second error count <u>when the chip parameter is set to a negative value,</u> and <u>comparing</u> the first error count with the second error count to <u>provide a difference</u>; and <u>controlling said chirp parameter in accordance with the difference</u> so that bit error detected is reduced. Hence, in the present invention, the chirp parameter is changed, bit errors are determined under the <u>different parameter value conditions</u>, and the correction of the chirp parameter is based on a difference of error counts measured using different chip parameters.

An error count is different from a bit error rate in that an error count is a whole number representing a specific count of particular errors in a selected sample, whereas a bit error rate requires a stipulated time period and is expressed as a fraction, e.g., the number of erroneous decoded bits in the stipulated time period divided by the total number of decoded bits.

Thus, Ishikawa et al. teaches a different scheme of adjusting a chirp parameter than the scheme recited by the present invention.

Utsumi teaches a method, device and system for controlling a wavelength of an optical signal. Nowhere in Utsumi is the term "chirp parameter" mentioned. In particular, Utsumi teaches controlling a parameter representing a temperature of a laser diode. Thus, it is respectfully submitted that Utsumi does not teach adjustment of the chirp parameter, and that there is no teaching or suggestion of combining Ishikawa et al. and Utsumi, and even if said references were combined, as noted above, the combination would not teach the present invention.

The courts have held that the Examiner may not suggest modifying references using the present invention as a template absent a suggestion of the desirability of the modification in the prior art. *In re Fitch*, 23 U.S.P.Q.2d 1780, Fed Cir. 1992. Something in the prior art as a whole must suggest the desirability, and thus, the obviousness, of making the combination. *Alco Standard Corp. v. Tennessee Valley Authority*, 808 F. 2d 1490, 1 U.S.P.Q. 2d 1337 (Fed. Cir. 1986). When a rejection depends on a combination of prior art references, there must be some teaching, suggestion or motivation to combine the references. *In re Geiger*, 815 F.2d 686, 688 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987).

Thus, it is respectfully submitted that since claims 2-5 depend from amended claim 1 and thus incorporate the limitations of amended claim 1, claims 1-5 and 16 are allowable under 35 U.S.C. §103(a) over Ishikawa et al. (USPN 5,926,297) in view of Utsumi (USPN 6,031,644).

B. Claims 7-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ishikawa et al. (USPN 5,926,297) in view of Utsumi (USPN 6,031,644) and further in view of Aoki (USPN 5,315,426).

This rejection is traversed, and reconsideration is respectfully requested.

Claim 7 has been amended for clarity.

As described above, Ishikawa et al. does not teach or suggest changing parameters and comparing an error count using a first parameter value with an error count using a second parameter value, as is recited by claim 7. Neither Utsumi not Aoki teaches or suggests comparing error counts when different chirp parameters are used. Thus, alone or in combination, Ishikawa et al., Utsumi and/or Aoki do not teach claim 7.

Since claims 8-15 depend from amended claim 7, claims 8-15 incorporate the limitations of amended claim 7. Since claim 7 is believed to be allowable under 35 U.S.C. §103(a) over Ishikawa et al. (USPN 5,926,297) in view of Utsumi (USPN 6,031,644) and further in view of Aoki (USPN 5,315,426), claims 8-15 are allowable for at least the reasons that amended claim 7 is allowable.